

## **CYPRESS–GUM SWAMP (BLACKWATER COVE SUBTYPE)**

**Concept:** Cypress–Gum Swamps are wet forests dominated by combinations of *Nyssa* and *Taxodium*, flooded for long periods by overbank flow from rivers or streams. The Blackwater Cove Subtype encompasses distinctive examples in deeply flooded and somewhat lake-like abandoned channel segments that are connected to blackwater rivers (commonly named coves or backwaters). The vegetation has an open to closed canopy of *Taxodium ascendens* and a substantial understory of *Fraxinus caroliniana*, *Cephalanthus occidentalis*, or *Planera aquatica*. The well-developed examples in North Carolina are on the Waccamaw River.

**Distinguishing Features:** The distinctive vegetation and environment distinguishes the Blackwater Cove Subtype from the Blackwater Subtype. The canopy may be open to nearly closed, but the deep flooding and abundance of *Cephalanthus occidentalis* or *Planera aquatica* are distinct. Canopy trees are almost exclusively *Taxodium*, which have disproportionately broad and tall buttresses. Either *Taxodium ascendens* and *Taxodium distichum* may dominate. Some Oxbow Lake (Blackwater Subtype) occurrences may have zones of similar vegetation, but they are distinguished by lack of connection to the river (except in flood).

**Synonyms:** *Taxodium ascendens* / *Fraxinus caroliniana* - *Cephalanthus occidentalis* - (*Planera aquatica*) Woodland (CEGL004289). Backwater (Schafale, Marty, and LeGrand 1985 - Waccamaw River study).

Ecological Systems: Atlantic Coastal Plain Small Blackwater River Floodplain Forest (CES203.249).

**Sites:** The blackwater Cove Subtype occurs in elongate, triangular, or round low areas that project upstream from the river channel; they are exposed only at very low water. This community may fill the cove, or it may form a rim around treeless open water.

**Soils:** Soils in the Blackwater Cove Subtype are often mucky but may be sandy if current flows through them at high water. Most are not specifically distinguished in soil mapping.

**Hydrology:** The Blackwater Cove Subtype is frequently flooded for long periods. Standing water may last for the entire growing season in wetter years. The flooding is often deeper than in other Cypress–Gum Swamps, with 2 meters of water not uncommon.

**Vegetation:** The Blackwater Cove Subtype canopy is dominated by either *Taxodium distichum* or *Taxodium ascendens*. The trees usually have a distinctive look, with very large, tall buttressed bases, small trunks, and narrow crowns that produce limited shade. A well-developed understory is present, dominated by *Fraxinus caroliniana*, *Cephalanthus occidentalis*, or *Planera aquatica*. *Crataegus* sp. or *Ilex amelanchar* may also be present. When the water is down, herbaceous species typical of drawdown areas may be seen. *Eragrostis hypnoides*, *Eleocharis baldwinii*, or *Juncus repens* usually dominate. *Lindernia anagallidea*, *Hydrocotyle prolifera* (*verticillata* var. *triradiata*), and rare species such as *Sabatia kennedyana* or *Fimbristylis perpusilla* may be present.

**Range and Abundance:** Ranked G2G3 but likely rarer. The abundance and range of this community in North Carolina needs further clarification. Backwater cove sites are present on the

Black, Lumber, and Northeast Cape Fear rivers but are numerous and well developed only on the Waccamaw. It may be that distinctive examples of this community depend on the distinctive hydrological character of this river. This community was only recently recognized and was usually not distinguished in earlier site descriptions. Plot data too are limited because times when the water is low enough for sampling are uncommon. The synonymized NVC association also occurs in South Carolina and is questionably attributed to Georgia and Florida.

**Associations and Patterns:** The Blackwater Cove Subtype is a small patch community, with suitable sites scattered. It borders the river on one side. It often grades into the Blackwater Subtype in a slough upstream from the cove, where the canopy is dense, *Nyssa biflora* may be a major canopy component, and *Cephalanthus* and *Planera* are less abundant. It usually is bordered by Blackwater Bottomland Hardwoods, potentially any subtype, along the sides.

**Variation:** No variants have been recognized.

**Dynamics:** The specific dynamics of this subtype are not known. Given the inability of *Taxodium* seedlings and saplings to survive inundation of their crowns, tree regeneration must be a rare event dependent on prolonged drought. Most of the stands appear to be even-aged or two-aged. The distinctive herbaceous vegetation may grow vegetatively beneath the water or may persist as a seed bank until a dry year. Though current may flow through some of these areas during deeper floods, still water prevails.

**Comments:**

**Rare species:** Vascular plants: *Fimbristylis perpusilla*.

**References:**